

Serial Number: 09/868,547

ENTERED

CRF Processing Date: 11/6/2001

Edited by: h

Verified by: h

(STIC stamp)

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: _____
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: _____
- ☒ Deleted: ☒ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/lastname at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically: _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a Patent bug). Sequences corrected: _____
- ☐ Other: _____

Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95

RAW SEQUENCE LISTING

DATE: 11/06/2001

PATENT APPLICATION: US/09/868,547

TIME: 07:56:55

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I868547.raw

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3 <110> APPLICANT: E. I. du Pont de Nemours and Company
5 <120> TITLE OF INVENTION: Flavonoid Biosynthetic Enzymes
7 <130> FILE REFERENCE: BB1324 1
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C--> 10 <141> CURRENT FILING DATE: 2001-09-20
12 <150> PRIOR APPLICATION NUMBER: 60/113,190
13 <151> PRIOR FILING DATE: 1998-12-21
15 <160> NUMBER OF SEQ ID NOS: 10
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22 <213> ORGANISM: Glycine max
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27 cagaaccatg ccaaaccatg tacagtttct gacttggttt ctactcttca aatttcacca 180
28 tctaaggctg gttttgtgca gcagttcatg cgcttttttg cacacgatgg aatctttgat 240
29 atccgtgaga gccaagatga tcatgaatta gcatatgctc taaccocctgc atcaaagctt 300
30 ctagttagtt gcagtgacca ctgtttatct ccaatgggtc ggatgaatac tgatccactt 360
31 ctgatgacta cataccatca ctttggggaa tggattcgtg gggaagacct cacagtacat 420
32 gagacagcct tcggaacaag cttttgggga cttcttgaga aaaaccctac acaaatgagt 480
33 ctcttcaatg aggctatggc aagtgattcc cgaatggtag acttggcact caaaaattgc 540
34 acttcagttt ttgaagggct agattccatg gtggatgttg gtggtggaac tggaaccaca 600
35 gccaaaatta tctgtgaggc atttccgaag ttgaaatgtg ttgtgcttga ccttcctcat 660
36 gttgtagaaa acttgacagg aaccaataat ttgagttttg tcggtggtga tatgttcaac 720
37 tctttccctc aaactgatgc agttctacta aagtgggttt tacataattg gaatgacgaa 780
38 aattgcataa agatcctgaa aaagtgtaaa gattctattt caagcaaagg caacaaagga 840
39 aaagtgatta tcatagatat aataataaat gagaagctag atgatccgga tatgactcga 900
40 acaaagctta gtttgatgat agttatgtcg actatgaatg gaagagagcg aagtgaacaa 960
41 gaatggaac aaatgttcat tgaagcggga ttcaaact gcaaaatatt tcccatcttt 1020
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47 <213> ORGANISM: Glycine max
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54 20 25 30
56 Gln Leu Gly Ile Pro Asp Ile Ile Gln Asn His Ala Lys Pro Ile Thr
57 35 40 45
59 Val Ser Asp Leu Val Ser Thr Leu Gln Ile Ser Pro Ser Lys Ala Gly
60 50 55 60
62 Phe Val Gln Gln Phe Met Arg Phe Leu Ala His Asp Gly Ile Phe Asp
63 65 70 75 80

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Input Set : A:\PTO.AMC.txt

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71 Val Arg Met Asn Thr Asp Pro Leu Leu Met Thr Thr Tyr His His Phe
72                               115                              120                              125
74 Gly Glu Trp Ile Arg Gly Glu Asp Pro Thr Val His Glu Thr Ala Phe
75                               130                              135                              140
77 Gly Thr Ser Phe Trp Gly Leu Leu Glu Lys Asn Pro Thr Gln Met Ser
78 145                               150                              155                              160
80 Leu Phe Asn Glu Ala Met Ala Ser Asp Ser Arg Met Val Asp Leu Ala
81                               165                              170                              175
83 Leu Lys Asn Cys Thr Ser Val Phe Glu Gly Leu Asp Ser Met Val Asp
84                               180                              185                              190
86 Val Gly Gly Gly Thr Gly Thr Thr Ala Lys Ile Ile Cys Glu Ala Phe
87                               195                              200                              205
89 Pro Lys Leu Lys Cys Val Val Leu Asp Leu Pro His Val Val Glu Asn
90                               210                              215                              220
92 Leu Thr Gly Thr Asn Asn Leu Ser Phe Val Gly Gly Asp Met Phe Asn
93 225                               230                              235                              240
95 Ser Phe Pro Gln Thr Asp Ala Val Leu Leu Lys Trp Val Leu His Asn
96                               245                              250                              255
98 Trp Asn Asp Glu Asn Cys Ile Lys Ile Leu Lys Lys Cys Lys Asp Ser
99                               260                              265                              270
101 Ile Ser Ser Lys Gly Asn Lys Gly Lys Val Ile Ile Ile Asp Ile Ile
102                               275                              280                              285
104 Ile Asn Glu Lys Leu Asp Asp Pro Asp Met Thr Arg Thr Lys Leu Ser
105                               290                              295                              300
107 Leu Asp Ile Val Met Ser Thr Met Asn Gly Arg Glu Arg Ser Glu Lys
108 305                               310                              315                              320
110 Glu Trp Lys Gln Met Phe Ile Glu Ala Gly Phe Lys His Cys Lys Ile
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124 ggttgagctt gacatacccg acataatcca cagccatagc catggccaac ccattacttt 180
125 ttcagagttg gtgtcaattc tacaagtccc accaactaaa actcgtcagg tgcagagcct 240
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127 agcatatgct ctactgctg cttcagagtt acttgtcaaa agcagtgagc ttagtttagc 360
128 tccaatggtt gagtattttc ttgaacaaaa ttgtcaaggt gcatggaacc agttgaagag 420
129 gtgggttcat gaggaagatc tcacagtatt tgaggtctcc ttaggaacac ctttctggga 480
130 ctttatcaat aaagaccctg catataacaa gtcattcaat gaggcaatgg cttgtgattc 540
131 tcagatgttg aacttggcgt ttagagattg caattgggtc tttgaggac tggaatccat 600

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RAW SEQUENCE LISTING

DATE: 11/06/2001

PATENT APPLICATION: US/09/868,547

TIME: 07:56:55

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I868547.raw

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132 tgtggatggt ggtggtggaa ctggaatcac agcaaagatt atctgtgagg cttttcctaa 660
133 gctgaaatgc atgggtgttg aacgtccaaa tgttgtggaa aatttgtcag gaagcaacaa 720
134 tttgacattt gttggtgggg acatgtttaa atgcatcccc aaggctgatg cagttctgct 780
135 taagttggtt ttacataatt ggaatgacaa cgattgcatg aagatattag aaaattgtaa 840
136 agaagctatt tcaggtgaaa gcaaaacagg aaaagtagtt gtcatagata ctgtgataaa 900
137 cgaaaacaaa gatgagcgcc aagttactga actaaagctc cttatggatg tacacatggc 960
138 atgtattatt aatggaaaag agagaaaaga agaagattgg aagaaactct tcatggaagc 1020
139 agggttccaa agctacaaaa tatctccctt cacaggatat ttgtctctta ttgagatcta 1080
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141 ataaaagtta tctttgtgtt                                     1160
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145 <212> TYPE: PRT
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153 20 25 30
155 Cys Leu Lys Trp Met Val Glu Leu Asp Ile Pro Asp Ile Ile His Ser
156 35 40 45
158 His Ser His Gly Gln Pro Ile Thr Phe Ser Glu Leu Val Ser Ile Leu
159 50 55 60
161 Gln Val Pro Pro Thr Lys Thr Arg Gln Val Gln Ser Leu Met Arg Tyr
162 65 70 75 80
164 Leu Ala His Asn Gly Phe Phe Glu Ile Val Arg Ile His Asp Asn Ile
165 85 90 95
167 Glu Ala Tyr Ala Leu Thr Ala Ala Ser Glu Leu Leu Val Lys Ser Ser
168 100 105 110
170 Glu Leu Ser Leu Ala Pro Met Val Glu Tyr Phe Leu Glu Pro Asn Cys
171 115 120 125
173 Gln Gly Ala Trp Asn Gln Leu Lys Arg Trp Val His Glu Glu Asp Leu
174 130 135 140
176 Thr Val Phe Glu Val Ser Leu Gly Thr Pro Phe Trp Asp Phe Ile Asn
177 145 150 155 160
179 Lys Asp Pro Ala Tyr Asn Lys Ser Phe Asn Glu Ala Met Ala Cys Asp
180 165 170 175
182 Ser Gln Met Leu Asn Leu Ala Phe Arg Asp Cys Asn Trp Val Phe Glu
183 180 185 190
185 Gly Leu Glu Ser Ile Val Asp Val Gly Gly Gly Thr Gly Ile Thr Ala
186 195 200 205
188 Lys Ile Ile Cys Glu Ala Phe Pro Lys Leu Lys Cys Met Val Leu Glu
189 210 215 220
191 Arg Pro Asn Val Val Glu Asn Leu Ser Gly Ser Asn Asn Leu Thr Phe
192 225 230 235 240
194 Val Gly Gly Asp Met Phe Lys Cys Ile Pro Lys Ala Asp Ala Val Leu
195 245 250 255
197 Leu Lys Leu Val Leu His Asn Trp Asn Asp Asn Asp Cys Met Lys Ile
198 260 265 270

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RAW SEQUENCE LISTING

DATE: 11/06/2001

PATENT APPLICATION: US/09/868,547

TIME: 07:56:55

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I868547.raw

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204      290      295      300
206 Val Thr Glu Leu Lys Leu Leu Met Asp Val His Met Ala Cys Ile Ile
207 305      310      315      320
209 Asn Gly Lys Glu Arg Lys Glu Glu Asp Trp Lys Lys Leu Phe Met Glu
210      325      330      335
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226 ccagacataa tacagaacca tgccaaaccc atttctcttt ctgacttggt ctctactctt 180
227 caaattccac cagctaacgc tgcttttgtg cagcggttca tgcgcttctt ggcacacaat 240
228 ggaatctttg agatccatga gagccaagaa gatcatgaac taacatatgc tctaaccctt 300
229 gcatcaaagc ttcttgtcaa tagtagtgat cattgtctat ctccaatggg tctagcgttt 360
230 accgatccac ttcggaacgt taaataccat cacttggggg aatggattcg tggggaggac 420
231 ccctcagtat ttgagacagc ccacggaaca agcgttgagg gacttcttga gaaaaatcct 480
232 gaataatttta gtctcttcaa tgaggctatg gcaagtgatt cccgaatagt agacttgcca 540
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236 gacatgttca actctatccc tcaagctgat gcagtgttac taaagtgggt tttacataat 780
237 tggaccgacg aaaattgcat aaagatcctg caaaagtgta gagattctat ttcaagcaaa 840
238 ggcaacagtg gaaaagtgat tatcatagat gccgtaataa atgagaagct agatgacctg 900
239 gatatgacac aaacaaagct tagtttggtg attattatgt tgacgatgaa tgggaagagag 960
240 agaacggaaa agaattggaa acaactcttc atcgaagcag gattcaaaca ctacaaaata 1020
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248 <400> SEQUENCE: 6
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253      20      25      30
255 Lys Trp Ala Val Gln Leu Gly Ile Pro Asp Ile Ile Gln Asn His Ala
256      35      40      45
258 Lys Pro Ile Ser Leu Ser Asp Leu Val Ser Thr Leu Gln Ile Pro Pro
259      50      55      60
261 Ala Asn Ala Ala Phe Val Gln Arg Phe Met Arg Phe Leu Ala His Asn

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/868,547

DATE: 11/06/2001

TIME: 07:56:55

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I868547.raw

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262 65              70              75              80
264 Gly Ile Phe Glu Ile His Glu Ser Gln Glu Leu Thr Tyr Ala Leu Thr
265              85              90              95
267 Pro Ala Ser Lys Leu Leu Val Asn Ser Ser Asp His Cys Leu Ser Pro
268              100             105             110
270 Met Val Leu Ala Phe Thr Asp Pro Leu Arg Asn Val Lys Tyr His His
271              115             120             125
273 Leu Gly Glu Trp Ile Arg Gly Glu Asp Pro Ser Val Phe Glu Thr Ala
274              130             135             140
276 His Gly Thr Ser Ala Trp Gly Leu Leu Glu Lys Asn Pro Glu Tyr Phe
277 145             150             155             160
279 Ser Leu Phe Asn Glu Ala Met Ala Ser Asp Ser Arg Ile Val Asp Leu
280              165             170             175
282 Ala Leu Lys Asn Cys Thr Ser Val Phe Glu Gly Leu Asp Ser Met Val
283              180             185             190
285 Asp Val Gly Gly Gly Thr Gly Thr Thr Ala Arg Ile Ile Cys Asp Ala
286              195             200             205
288 Phe Pro Lys Leu Lys Cys Val Val Leu Asp Leu Pro His Val Val Glu
289              210             215             220
291 Asn Leu Thr Gly Thr Asn Asn Leu Ser Phe Val Gly Gly Asp Met Phe
292 225             230             235             240
294 Asn Ser Ile Pro Gln Ala Asp Ala Val Leu Leu Lys Trp Val Leu His
295              245             250             255
297 Asn Trp Thr Asp Glu Asn Cys Ile Lys Ile Leu Gln Lys Cys Arg Asp
298              260             265             270
300 Ser Ile Ser Ser Lys Gly Asn Ser Gly Lys Val Ile Ile Ile Asp Ala
301              275             280             285
303 Val Ile Asn Glu Lys Leu Asp Asp Pro Asp Met Thr Gln Thr Lys Leu
304              290             295             300
306 Ser Leu Asp Ile Ile Met Leu Thr Met Asn Gly Arg Glu Arg Thr Glu
307 305             310             315             320
309 Lys Glu Trp Lys Gln Leu Phe Ile Glu Ala Gly Phe Lys His Tyr Lys
310              325             330             335
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316 <211> LENGTH: 1253
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318 <213> ORGANISM: Glycine max
320 <400> SEQUENCE: 7
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323 ccattgcaaaa cccattactc tttctgattt ggtctctact cttcaaattc caccatctaa 180
324 ggctggtttt gtgcagcagt tcatgcgctt tttggcacac gatggaatct ttgatatccg 240
325 tgagagccaa gatgatcatg aattagcata tgctctaacc cctgcttcaa agcttctagt 300
326 tagttgcagt gaccactgtt tatctccaat ggttcggatg aatactgac cacttctgat 360
327 gactacatac catcactttg gggaatggat tcgtggggaa gacccacag tacatgagac 420
328 agccttcgga acaagctttt ggggacttct tgagaaaaac cctacacaaa tgagtctctt 480
329 caatgaggct atggcaagtg attcccgaat ggtagacttg gcactcaaaa attgcacttc 540

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VERIFICATION SUMMARY

PATENT APPLICATION: US/09/868,547

DATE: 11/06/2001

TIME: 07:56:56

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I868547.raw

L:9 M:270 C: Current Application Number differs, Replaced Application Number

L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date

PCT09

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/868,547

DATE: 10/30/2001

TIME: 14:05:44

Input Set : A:\BB1324 PCT 01 Seq List.txt

Output Set: N:\CRF3\10302001\I868547.raw

Does Not Comply
Corrected Diskette Needed

3 <110> APPLICANT: E. I. du Pont de Nemours and Company
 5 <120> TITLE OF INVENTION: Flavonoid Biosynthetic Enzymes
 7 <130> FILE REFERENCE: BB1324 1

C--> 9 <140> CURRENT APPLICATION NUMBER: US/09/868,547

C--> 10 <141> CURRENT FILING DATE: 2001-09-20

12 <150> PRIOR APPLICATION NUMBER: 60/113,190

13 <151> PRIOR FILING DATE: 1998-12-21

15 <160> NUMBER OF SEQ ID NOS: 10

17 <170> SOFTWARE: Microsoft Office 97

ERRORED SEQUENCES

440 <210> SEQ ID NO: 10

441 <211> LENGTH: 350

442 <212> TYPE: PRT

443 <213> ORGANISM: Glycine max

445 <400> SEQUENCE: 10

446 Ala Ser Met Asn Asn Gln Lys Glu Ile Glu Leu Phe Glu Gly Gln Ser

447 1 5 10 15

449 Leu Leu Tyr Met Gln Leu Tyr Gly His Leu Arg Pro Met Cys Leu Lys

450 20 25 30

452 Trp Ala Val Gln Leu Gly Ile Pro Asp Ile Ile Gln Asn His Ala Lys

453 35 40 45

455 Pro Ile Ser Leu Ser Asp Leu Val Ser Thr Leu Gln Ile Pro Pro Ala

456 50 55 60

458 Asn Ala Ala Phe Val Gln Arg Phe Met Arg Phe Leu Ala His Asn Gly

459 65 70 75 80

461 Ile Phe Glu Ile His Glu Ser Gln Glu Leu Thr Tyr Ala Leu Thr Pro

462 85 90 95

464 Ala Ser Lys Leu Leu Val Asn Ser Ser Asp His Cys Leu Ser Pro Met

465 100 105 110

467 Val Leu Ala Phe Thr Asp Pro Leu Arg Asn Val Lys Tyr His His Leu

468 115 120 125

470 Gly Glu Trp Ile Arg Gly Glu Asp Pro Ser Val Phe Glu Thr Ala His

471 130 135 140

473 Gly Thr Ser Ala Trp Gly Leu Leu Glu Lys Asn Pro Glu Tyr Phe Ser

474 145 150 155 160

476 Leu Phe Asn Glu Ala Met Ala Ser Asp Ser Arg Ile Val Asp Leu Ala

477 165 170 175

480 Leu Lys Asn Cys Thr Ser Val Phe Glu Gly Leu Asp Ser Met Val Asp

481 180 185 190

483 Val Gly Gly Gly Thr Gly Thr Thr Ala Arg Ile Ile Cys Asp Ala Phe

484 195 200 205

486 Pro Lys Leu Lys Cys Val Val Leu Asp Leu Pro His Val Val Glu Asn

487 210 215 220

489 Leu Thr Gly Thr Asn Asn Leu Ser Phe Val Gly Gly Asp Met Phe Asn

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/868,547

DATE: 10/30/2001

TIME: 14:05:44

Input Set : A:\BB1324 PCT 01 Seq List.txt

Output Set: N:\CRF3\10302001\I868547.raw

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493                245                250                255
495 Trp Thr Asp Glu Asn Cys Ile Lys Ile Leu Gln Lys Cys Arg Asp Ser
496                260                265                270
498 Ile Ser Ser Lys Gly Asn Ser Gly Lys Val Ile Ile Ile Asp Ala Val
499                275                280                285
501 Ile Asn Glu Lys Leu Asp Asp Pro Asp Met Thr Gln Thr Lys Leu Ser
502                290                295                300
504 Leu Asp Ile Ile Met Leu Thr Met Asn Gly Arg Glu Arg Thr Glu Lys
505 305                310                315                320
507 Glu Trp Lys Gln Leu Phe Ile Glu Ala Gly Phe Lys His Tyr Lys Ile
508                325                330                335
510 Phe Pro Ile Phe Gly Phe Arg Ser Leu Ile Glu Val Tyr Pro
511                340                345                350
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VERIFICATION SUMMARY

DATE: 10/30/2001

PATENT APPLICATION: US/09/868,547

TIME: 14:05:45

Input Set : A:\BB1324 PCT 01 Seq List.txt

Output Set: N:\CRF3\10302001\I868547.raw

L:9 M:270 C: Current Application Number differs, Replaced Application Number

L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:513 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:10